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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2306

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CEMA ECONOMIC PROJECTS IN DEVELOPING COUNTRIES OUTLINED

East Berlin AW--DDR-AUSSENWIRTSCHAFT in German Vol 10 No 22, 26 May 82 pp 1-2

[Report by Information and Public Relations Department, GDR Ministry for Foreign Trade: "Cooperation With CEMA Countries Promotes Socioeconomic Progress of Developing Countries"]

[Text] During their 35th meeting, CEMA countries confirmed their efforts to expand and solidify equal, mutually advantageous cooperation with the developing countries. Over the last 10 years the number of developing countries with which CEMA countries cooperated economically and technically grew from 62 to 90.

Long-Term Agreements With 80 Countries

Collaboration promotes socioeconomic progress of developing countries and simultaneously strengthens their economic independence. The cooperation is increasingly taking on larger dimensions and long-term significance. Government agreements exist with approximately 80 developing countries (1980 figures); they represent various forms of collaboration and cover periods extending from 5 to 15 years or more. On the basis of such agreements, trade and economic relations are developing between the following countries, among others.

--the People's Republic of Bulgaria and Argentina, Iran, Nicaragua and Panama,

--the Hungarian People's Republic and India and Nigeria,

--the GDR and India, Algeria, Libya, Nigeria, Nicaragua and the Philippines,

--the Socialist Republic of Romania and India, Algeria, Angola, Bangladesh, Libya, Mexico and Mozambique,

--the USSR and India, Algeria, Argentina, Afghanistan, Iran, Libya, Morocco, Peru and Syria as well as

--the CSSR and India, the People's Democratic Republic of Yemen, Nigeria and Panama.

Major Areas of Economic and Technical Support

An important component of the economic relations is the economic and technical support supplied by CEMA countries to the developing countries. Approximately 80 percent of the total of this support goes to industry and energy, about 5 percent each to agriculture, to transportation and communications, to geological exploration and development and to education, health care, culture and municipal utilities.

Consequently, the cooperation is concentrated on areas which promote the development of national industries and the diversification of the economy and raise the level of economic and cultural development. Energy is of special importance and its development is an indispensable prerequisite for socio-economic progress in the developing countries. Of 4,918 construction projects that have been or are in the process of being completed with economic and technical assistance by CEMA countries (status: 1 January 1981), 1,696 are energy-producing projects; 1,131 of them are in Asian, 502 in African and 63 in Latin American states. Other industries involved are:

--food industry, 663,

--light manufacturing, 239,

--machine construction and metal processing, 193,

--building-material industry, 172,

--chemical industry, 161,

--petroleum and petroleum-processing industry, 103,

--ferrous and nonferrous metallurgy, 96,

--agriculture, 344,

--transportation and telecommunications, 335 as well as

--social services (health care, education and others), 641.

With the help of the People's Republic of Bulgaria more than 50 projects have to date been completed or expanded, among them are plants for building tractors, chemical and light manufacturing plants as well as the airports in Bagdad and Tripoli. During the last 10 years the GDR gave economic and technical assistance for the construction of more than 650 facilities. To date the People's Republic of Poland has supplied equipment and facilities for more than 200 industrial plants, among them are sugar, chemical, textile as well as power plants. The Socialist Republic of Romania is participating in the completion of 80 development projects. In accordance with existing agreements providing economic and technical cooperation for more than 60 countries, the USSR is helping developing countries with the construction of 1,150 different projects, of which 640 are already in operation. The annual capacity of completed projects in the energy-producing industry, for instance, is 7.37 million kilowatts, in the iron and steel industry it amounts to 10.8 million tons of pig iron, 9.7 million tons of steel and 7.5 million tons of rolled products and in the building and building-material industry it comes to 700,000 tons of concrete and slabs for 450,000 square meters of floor space. The CSSR, which maintains trade and economic relations with more than 90 developing countries, delivered, above all, all materials required for the complete equipment and installation of plants in the metal-processing industry, for power plants, sugar-, cement-, textile- and leather-processing factories.

Table 1 Capacities That Have Been or Are Being Established with CEMA-Country Support in Developing Countries

Industry	Unit of Quantity	Total of Projects Provide by Agreements	Of That Total Number in Operation
Electric energy (installed capacity)	million kilowatts	23	11
Steel	million tons	30	10
Iron ore	million tons	14	11
Coal	million tons	33	3
Petroleum (production)	million tons	67	63
Petroleum products	million tons	50	30
Bauxite	million tons	2.5	2.5
Clay	million tons	300	300
Fertilizer	million tons	200	200
Cement	million tons	7	5
Storage facilities (capacity)	million tons	1.5	1.0
Slabs for housing construction	million square meters	3.5	0.5
Irrigation and soil exploration	1,000 hectares	3	-
Railway lines	1,000 kilometers	3	2
Streets	1,000 kilometers	2.7	1.8

From: INFORMATION BULLETIN, "Economic Cooperation of CEMA member countries," January 1982.

A number of projects are erected on a barter basis.

As specialization and cooperation in production between CEMA countries becomes more and more intricate, the division of labor which marks the collaboration in equipping industrial plants in developing countries is gaining more and more significance. At the present time more than 190 projects are being completed in this manner.

Developing countries are settling their accounts for services provided by CEMA countries by shipping products and goods that are typical for their countries and produced by national industries. The latter take on special significance, because they promote the development of national industries in the developing countries and foreign trade.

Dynamic Development of Reciprocal Exchange of Goods

The expansion and consolidation of economic relations within the last few years is also reflected in the development of foreign trade between CEMA countries and the developing countries. Over the last 20 years foreign trade increased from 1.7 billion rubles (1960) to 26 billion rubles (1980). At 14.6 percent, the average annual growth during this period is one of the most dynamic indicators in world trade. Simultaneously the share of the developing countries in the foreign trade of CEMA countries increased from 6.9 to 11.6 percent.

Machinery, plant equipment and transportation equipment as well as other manufactured goods, such as chemical products, fertilizer and building materials, play a major role in exports to the developing countries. During the 1970's more than one-third of all exports consisted of machinery, plant equipment and transportation equipment. In 1980 these shipments amounted to more than 4 billion rubles, for the USSR alone it came to 1.7 billion rubles. Of particular importance are the deliveries of machine tools, electrotechnical equipment, agricultural machinery and transportation equipment. The export of complete plants--including all industrial equipment--is increasing within the framework of the programs of economic and technical assistance. By 1979, shipments of this kind, when compared to 1960, had increased 14-fold. In 1979, they amounted to approximately 1.5 billion rubles, the share of the USSR was 800 million rubles.

Table 2. Trade of Select CEMA Countries with Developing Countries

Country	In Million Rubles 1960	In Million Rubles 1980	Share of Foreign Trade by Percentage 1960	Share of Foreign Trade by Percentage 1980
People's Republic of Bulgaria	31	1,186	2.9	8.8
Hungarian People's Republic	90	2,128	5.5	10.3
GDR	163	1,716	4.1	6.7
Republic of Cuba	99	196	9.2	3.0
People's Republic of Poland	181	2,374	7.1	9.5
Socialist Republic of Romania	58	4,522	4.7	26.5
USSR	785	11,962	7.8	12.7
CSSR	352	1,434	10.4	7.1

From: INFORMATION BULLETIN, "Economic Cooperation of CEMA Member Countries", January 1982.

At the present time, raw materials make up approximately half of the exports by developing countries to CEMA countries and a large part of them consists of tropical and subtropical products--citrus fruit, coffee, cocoa, bananas, N-caoutchouc, cotton. Although the export of these goods increased six-fold between 1960 and the end of the 1970's, their proportion of total imports from developing countries declined somewhat during the last few years. Because of the expansion in the exports of fuels, mineral raw materials and metals, the structure of imports from developing countries changed significantly. At the end of the 1970's these goods already represented 40 percent. Of increasing importance is the sale of finished products and semifinished products to CEMA countries.

Cadre Training--Important Component of Cooperation

The assistance in the training of national cadres is an item of high priority in economic relations between CEMA countries and developing countries. The procedures are:

--training of skilled workers and medium-level technical personnel during the construction and operation of projects,

--training of cadres and skilled workers in engineering technology at colleges and technical schools as well as vocational schools which have been or are being built in developing countries with the help of CEMA countries,

--initial and advanced training of specialists and workers from developing countries in production techniques in CEMA--country plants as well as

--training at colleges and technical schools in CEMA countries.

Until the beginning of 1980, 1 million citizens from developing countries were trained and qualified in this manner, 600,000 of them during the construction and operation of projects, 300,000 in educational institutions that were built and equipped in developing countries with the help of CEMA countries as well as 100,000 at colleges and technical schools and other educational institutions and plants in CEMA countries.

To date 56 colleges and technical a schools as well as 158 vocational training centers have been built and equipped with the assistance of CEMA countries. More than 70 different educational institutions are currently under construction or are to be built according to agreements.

At the 26th CEMA meeting (1973) the decision was made to establish a scholarship fund, which has been in effect since the academic year of 1974/1975. First it only applied to college education, since 1976/1977, however, it has been expanded to include also postgraduate studies and vocational training. Because of it the number of scholarship recipients increased significantly. Since the funds was established, approximately 3,500 citizens from 50 countries in Asia, Africa and Latin American have studied at educational instituations in CEMA countries.

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CSO: 2300/307

PROSPECTS OF CORN PRODUCTION SYSTEMS WEIGHED

New Technology

Budapest MAGYAR MEZOGAZDASAG in Hungarian No 25, 23 Jun 82 pp 4, 5

[Article by Dr Istvan Kiss, branch chief: "IKR, Babolna; With New Technology, More Artificial Fertilizer"]

[Text] This year we delivered a new corn production technology to our member farms. Our goal was an adaptation of our soil cultivation technology by realizing procedures constituting the basis for a system stretching over several years which saves energy and conserves water. With good quality fall plowing and soil sealing done in time the farms prepared seedbeds more favorable than ever before. Especially favorable results were achieved by using zone smoothers supplemented with a rod drum.

Depending on nutrient conditions we recommended use of 6.6 kilograms for production of 100 kilograms of yield, an average of 450 kilograms of assorted effective material. This is 16 kilograms more than last year.

There was increased demand, compared to last year, for BHF biological yield increasing materials, primarily on the basis of the experiences of the GFP farms. Our member farms used the BHF-21 soil conditioning preparation on 32,000 hectares.

Our goal with types technology was to make fullest use of the ecological potential of the producing area. In the technological system we developed a breeding season structure differentiated by genotype, determining planting time, planting depth and growing area according to the type.

This year we planted 23 hybrids, the genetic potential of which exceeds that of last year by 300 kilograms. Thus the genetic potential of our operational types structure is 14,060 kilograms. On our GFP farms this figure is 14,590 kilograms per hectare. We changed the growing season structure of the hybrids in accordance with our plans also. We increased the ratio of FAO 400 hybrids, because of the use of the damp storage technology.

Despite the change in the trading system our seed supply ended successfully. A transitional character could be experienced in the pace of deliveries;

despite this more than 90 percent of the seed reached our farms in time. The hybrids coming from import did not arrive in time. Of the seed delivered to our member farms, 87 percent was first class. Despite this there were many quality complaints at planting time. Some batches were not homogeneous, which presented problems for the uniformity of planting. This is a deficiency of hybrid preparation.

The cold test for 90 percent of our seed was over 80 percent, but it should be noted that we do not consider the 10 degrees Celsius cold germination used during quality tests to be strict enough, because this does not show the real resistance to cold.

The greatest progress in production conditions was in crop protection despite the fact that there were supply problems in Komarom Megye for one preparation (Maloran 50 WP).

Our technical supply is still bothered by the shortage of running gear and distributor parts for the Raba-Steiger tractors. By planting time we were able to solve the running gear problems but not the shortage of distributors. The late arrival of planting parts caused a problem, as did the fact that we were able to get our new planting machines from 17 to 21 April.

Our member farms have 498 planting machines to plant 218,000 hectares of commodity corn. Considering the machine capacity this meant that planting could be completed in 7 days. The long cold snap in April did not make possible the timely beginning we got used to in earlier years. In the course of the adaptation and on the occasion of talks with the economic leaders we deliberately delayed the start of planting, knowing the planting capacity. Our farms began with full capacity on 26 April. The actual planting performance averaged 14,000 hectares per day. The peak was 19,000 hectares on 1 May, when the soil temperature reached the desired level in all areas. We completed planting on 8 May.

We looked over about 250,000-300,000 hectares of corn and cereal grain area in the 109 member farms in our eight production organization units. We evaluated the spring work at meetings on our member farms. Naturally, we also got a picture of the development of sunflower, sugar beets and fodder plantings. We found that, compared to previous years, technological discipline improved substantially on our member farms. The average amount of effective material actually used came to 455 kilograms per hectare. This is 21 kilograms more than last year. The territorial ratio for starter artificial fertilizer use increased also. The amount of seed originally determined increased by 2-4 percent at the time of planting, due to the severe cold. Under the influence of the strong warming after the completion of planting every seed sprouted, and as a result the present number of stalks is 69,874 per hectare, well set and of even development. At the same time last year this number was 65,816.

Seed Supply

Budapest MAGYAR MEZOGAZDASAG in Hungarian No 25, 23 Jun 82 pp 4, 5

[Article by Emil Bodnar, branch chief: "KITE, Nadudvar; Good Seed, Even Stock"]

[Text] The role of the hybrid, as the biological base, is the determining factor for the yield of corn. The stalk number and interval, which belong to the given hybrid, is one of the conditions--about equally determining from the biological side--for successful production. When planting corn we had to concentrate on getting the necessary number of plants into the given area with the seed and technology available.

In seed supply what was determining in regard to variety was having the seed production guide numbers in harmony with the actual needs on the KITE farms. There was a minor shortage, about 5 percent, of the Pioneer hybrid 3901 SC seed, which could be made up with hybrids within the growing season. The 10-percent shortage of Pioneer hybrid 3732 SC seed caused a bigger problem. As is well known this hybrid performed poorly in seed production; there were many batches consisting of large round seeds, with only 2,000-2,500 seeds per kilogram. We were able to completely make up the shortage here with the Pioneer hybrid 3709 MSC seed, which belongs to the same genetic sphere. Seed was available in good quality. It has been the practice in the KITE for years to give the cold test values in addition to the data on the Seed Classification Certificate; this serves as a basis for estimating germination in the soil of seed under the given conditions, and serves as a basis for correcting the necessary germination and planting times.

Beginning in 1982 the National Seed and Propagation Materials Directorate (OVSZF) has done such tests also and this appears, for information purposes, on the Classification Certificate or the extract thereof.

It should be noted that this year the KITE did the cold test in parallel and by and large the results agreed with the test values of the OVSZF. The seeds sold fell in the following cold test categories: 1.1 percent of the seed batches were 75 percent, 1.1 percent fell between 75 and 80 percent, 0.7 percent fell between 80 and 85 percent, 8.9 percent fell between 85 and 90 percent, 29.8 percent fell between 90 and 95 percent and 58.4 percent of the seed batches fell between 95 and 100 percent.

In addition to fall 1981 having been very favorable for the ripening of corn, a role was played in the development of the good test results by the fact that every batch of seed was dressed with Buvishild K, which contains a material improving the cold test value. The April cold weather delayed the beginning of planting. Soil temperatures of 10-12 degrees developed only in the first 10 days of the month, too early to start planting. Following this, due to the cold snap, the soil temperature stayed below 10 degrees Celsius. It was our opinion in the KITE to wait until 25 April for the soil to warm up and have the farms do the planting as a function of this, after that to go full steam ahead regardless of soil temperature. Corn was planted on the corn area included in the 224,000 hectare system as follows:

1.5 percent in the first 10 days of April, 9.5 percent in the second 10 days of April, 39 percent in the third 10 days of April, 40 percent in the first 10 days of May, and 10 percent in the second 10 days of May.

The figures show that it was possible to wait until 20 April to begin large scale planting and the farms did wait, planting with full capacity thereafter. Our partners have 523 large capacity planting machines (320 IHC and 203 Becker). This makes it possible to plant the commodity corn in 10 days. Further expansion of the planting capacity with large capacity planting machines is needed because of the 100,000 hectares of silage and household area also.

We had no problem with import parts for the planting machines--if the parts were ordered. Late delivery, stretching into the planting time, of our domestically made parts for the IH planting machines did cause difficulty.

The sprouting results are favorable, reflecting that we used good seed and that the fall and spring soil work was good. We watched and evaluated the planting done at different times. There was no poor sprouting requiring replanting in our area. We found that sprout death was 20-25 percent in the early April planting and around 5 percent in the end of April planting. The corn sprouted well in the May planting also, due to the fast warming.

In sum, the picture is favorable; in the May-June heat the corn "made up" about 10 days of the 10-14 day delay in planting. The rain at the end of May and beginning of June came at a good time. We are justly hopeful!

Progress in Corn Production

Budagpest MAGYAR MEZOGAZDASAG in Hungarian No 25, 23 Jun 82 p 5

[Article by Attila Rozsas, branch chief: "KSZE, Szekszard; Let's Not Base Things on the SPC-6!"]

[Text] "The most trouble in the practice of agriculture comes from not finding the optimum. Perhaps one can compare this practice to target shooting, in which the marksmen are trying to hit the target in the dark. Sometimes they succeed, due to chance, and they they get really nice results. But how many times one has to shoot into the dark to get one good hit."

In many respects this saying of Professor Mandy was true 10-12 years ago, but in the present practice of corn production the saying can be only more or less true because in the contrary case Hungary would not have reached the outstanding second to fourth place in the ranks of countries producing on an area larger than one million hectares. On the basis of innumerable experiments and the experience of the large farms we have expanded our knowledge of corn production, although there are cases where--lacking knowledge of objective factors--it looks like shooting in the dark. In the technology of corn production it may appear this way most sharply in the three-way interdependence of type, planting time and stalk number.

When compiling the 1982 type assortment on the basis of experience we studied the significance and needs of high germination types requiring warmth and increasingly sensitive to shell damage and we made changes in the assortment to improve yield security and the usefulness ratio.

We judged this year's supply of seeds to be good in regard to both variety and quality. Of the seeds going to the member farms of the production system 94 percent had a cold test value above 90 percent, and a large percentage of it was metal sealed in the hybrid plants of the Dalmad State Farm, the Mezofalu Agricultural Combine and the Boly Agricultural Combine.

In 1982 the member farms of the KSZE planted corn on 182,000 hectares. Because of the extraordinarily unfavorable weather our farms began planting on 23 April and had finished on 97 percent of the area by 6 May.

Of the yield limiting factors on the farms belonging to the system the most significant are lack of precipitation and the low stalk number. The lack of precipitation counts as a given but we can mitigate its effect by accomodating to the weather, primarily by choosing a proper planting time. Changes in stalk number can be planned within certain limits depending on circumstances and the change which can be realized should be made.

A study of the relationship between the previous crop and yield provided two important lessons.

In those areas where there were significant variations in soil temperature during the planting period (for example, Veszprem, Vas and Somogy) corn produced after wheat gave a smaller yield than corn planted after corn. One reason for the drop in yield was the small stalk number. The phenomenon has a relationship to fungicide side effects of the herbicides used in controlling weeds in wheat or corn. Because of the prolonged germination and sprouting in low soil temperatures the fungi living in the soil, which destroy seeds and sprouts, do more damage.

It was shown in the course of experiments that Dikonirt and Dikotex are completely ineffective against the Fusarium graminearum and Fusarium culmorum attacking from the soil while propachlor, linuron, Aktinit PK and chlorobromuron, among the effective materials studied which are used to control weeds in corn, hindered the spread of fungi almost 100 percent. So, on the basis of experience, we recommended planting at the end of the planting season on difficult to warm fields after a previous crop of wheat. A dressing is needed which offers adequate protection to the seed under various soil conditions, which does not prolong sprouting, that is which does not delay the rate of sprouting, and which contains a broad spectrum of fundgicide.

Of the technical conditions for planting the most important role goes to the planting machines. This year also our partner farms bought many SPC-6 planting machines and replaced even the worn out John Deere 1280 planting machines with these. The following figures suggest the level of the planting machine park: in 1982 our member farms operated the following types of planting machines to plant corn--133 Beckers, 111 JD 1280's, 118 Cyro 400's and 585 SPC-6'es.

Despite the fact that the SPC-6 is the cheapest to buy we do not think extensive use of this planting machine is useful, because of the unsolved nature of starter artificial fertilizer use and soil decontamination and because of its small area performance.

Results, Goals Summarized

Budapest MAGYAR MEZOGAZDASAG in Hungarian No 25, 23 Jun 82 p 5

[Article by Sandor Sztrikinacz, technological department chief: "BKR, Baja; The Result of Better Preparation"]

[Text] In the area of the Baja Corn Production System (BKR) the natural conditions favor primarily the production of cereal grains, in the realization of the grain program, so the area sown in wheat increased significantly in the fall. After the spring planting we could establish that the area in corn was, unfortunately, less than the average of preceding years. We attribute the reduction in area to economic and natural conditions.

Evaluating the experience of preceding years, we posted as the primary goal an improvement in the quality of planting. We could establish that there was no problem on our partner farms with the fall plowing, acquisition of chemicals (artificial fertilizer and crop protection materials) or preparation of the seedbed. The soil work was done in time and in the proper quality.

The biological background is an essential element for increasing average yields. Good quality seed is an indispensable condition. The best quality seeds of recent years were at our disposal, so there were no basic supply difficulties. With the exception of the Pioneer 3732 hybrid we were able to satisfy practically all the needs.

Despite the improving supply, there are still deficiencies, unfortunately, in the preparation of seed at some seed plants. The farms justly expect that they will not get for their money broken kernels, pieces of cob or even dressed detritus. Luckily this is not the general thing, we met with it only exceptionally, but we mention it so there will be even fewer such claims in the future.

Our partner farms prepared for corn planting better than in preceding years. One condition for planting is favorable weather. This year we found out how definitive this can be for agricultural work. The cold April delayed the work and planting did not begin because of the low soil temperature. The farms got started only at the end of April, independent of temperature. Seed got into 50 percent of the area in April and into the other 50 percent in the first week of May. Our partner farms completed planting corn between 10 and 12 May. The earlier plantings germinated with difficulty and just lay for several weeks.

The cold test results gave good service in determining the sequence of planting. The corn fields were equalized, but we saw a lag in development compared to the average. The lag was greater where there was no or only very little precipitation.

One condition for quality planting is good corn planting machines satisfying the requirements for large yields on the basis of the conditions defined in the plan. Our partner farms planted with Cyclo 400 and SPC-6 machines.

We studied and tested the Nodet planting machines in operation last year. On the basis of stalk evenness and depth of planting it gave better results than the machines now used. According to our plans--supported by the needs of the partner farms--we wanted to use this planting machine this year. Unfortunately we could get only as far as the plans...

It is no new finding that an even stalk number increases yields. We must latch onto every form of increasing yields and so in the future also we think it would be useful to use this planting machine.

Further development of production technology is important in the area of corn production also. We have as a goal the attaining of large yields (over 10 tons) on a large scale (on 2,500 hectares) as an experiment. Our primary goal, in addition to the yield results, is to increase profit per unit area.

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CSO: 2500/310

HUNGARIAN-PURINA COLLABORATION

Budapest MAGYAR MEZOGAZDASAG in Hungarian No 24, 16 Jun 82 p 4

[Text] After 6 months preparatory work, a cooperation and license purchase contract was signed at the end of last month--through the mediation of the Agrimpex Foreign Trade Enterprise--between the Hajudag Agricultural-Industrial Association (HAGE) and the American Purina firm. According to the terms of the contract the enterprise, which is one of the largest grain trading and feed supplement manufacturing firms in the United States, one which is well known here also, will hand over to the Hungarian partner its hog feed and raising technology.

In the first phase of the contract, which covers a 5-year period, the HAGE will buy this year and in the first half of next year, using funds available, about 8,000 tons of preconcentrates (so-called supplements): baby and prestarter piglet supplements and preconcentrates for young pigs, porkers and sows. In the second phase, using formulas made available by Purina--with the exception of the baby piglet supplement--the HAGE will manufacture the abovementioned hog feeds. The cooperation also extends to joint trading of certain products, and Purina will undertake to buy the preparations of the HAGE and of HAGE-Biogal also.

Experiments in Hungary prove that mortality decreases and rough fodder can be saved with hogs fed with the Purina method. For example, the quantity of soy meal in the feed can be reduced by almost 10 percent.

Feeding is an important element in fattening hogs, but in addition a number of genetic, raising technology and animal health factors must be in harmony for profitable production. For this reason experts from Purina are doing a detailed survey before starting broad use of the new feeding program to see if the sites meet the requirements. Another essential factor is the quality of the primary materials and the technical condition of the mixes; these must be strictly controlled. In the interest of appropriate practical experience the cooperation will include professional training also.

According to the terms of the contract, after domestic manufacturing begins, the Purina line will be fed to about 1.5 million hogs being raised in large operations. The feeds will be sold primarily among the partner farms of the HAGE and KA-HYB pork production system.

The cooperation and license purchase contract was signed--in the presence of Istvan Szabo, president of the HAGE--by Dr D. A. Mefford, chief of the European office of Purina, Dr Ivan Novobaczky, director of the HAGE, and Karoly Samu, director general of Agrimpex.

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OVERVIEW OF POLISH AIRCRAFT INDUSTRY

Present Outlook

Warsaw TECHNIKA LOTNICZA i AUSTRONAUTYCZNA in English No 3, Jun 82 pp 1-9

[Article by Mgr inz. ANDRZEJ GLASS M. Sc. Eng.: "Current Situation in Polish Aircraft Industry"]

[Text] Many branches of industry pass through difficulties because of shortages in raw materials and energy supply. Therefore the answer to the question, whether the crisis significantly affected activity of the Polish aircraft industry, is very interesting.

The best answer may be obtained when we analyse the factors which could limit industrial activity and when we discuss production results. No essential reasons to impede work progress occurred in the field of design, building and testing of prototypes, hence in 1981 and 1982 new airplanes of the Kruk or Dromader families or Jantar gliders have been arising; development works at helicopters, in particular at the Sokól are also carried on.

The Polish aircraft production is based mainly on supplies of materials and semi-finished products from the Soviet Union, and afterwards on domestic goods, therefore the restrictions imposed to imports from the dollar zone have not become essential for production size. The limitations in energy supply were not severe either for the aircraft industry. The production was affected to some extent by intermittent drops in productivity last year. The number of machine tools being repaired increased in same factories because of difficulties in obtaining spare parts for them and the necessity to perform the repair works in one's own capacity. As a result of the above situation and owing to the fact that the Polish aircraft industry is quite full of vitality, well equipped and modern one, the difficulties connected with the crisis did not decrease very much production possibilities of this branch of industry. Therefore, manufacturing of none of the aircraft industry products has been stopped because of the crisis, and at present all the orders having been obtained by that industry are being realized. Of course the effects depend not only on production possibilities but also, to the same extent, on customers' orders. The Polish aircraft industry has got orders for its main products for several years in advance. This does not mean, however, that its production possibilities are fully used up. Therefore, the Polish aircraft industry submits its export offer to all possible markets in the field of airplanes, helicopters, gliders, aircraft engines and equipment. The aircraft industry production and the more important development works in individual aircraft categories are presented below.

Agricultural Airplanes

The PZL Works in Warsaw and in Mielec manufacture agricultural airplanes, from the lightest to the heaviest ones. They include: Wilga, Kruk, An-2 and Dromader. The Wilga and the An-2 are multipurpose airplanes, built as well in the agricultural version, while the Kruk and Dromader are especially designed for agricultural works. The **PZL-104 Wilga** with a hopper for 300 kg of liquid chemicals serves for low volume spraying (ULV). It is planned to develop an improved version of the Wilga ag-plane with load capacity of 350 kg of liquid chemicals.

At present the **PZL-106 Kruk** denotes already a family of airplanes instead of one type. Since 1976, the Kruk A with the PZL-3S engine without a reduction gear, with load capacity of 1000 kg of chemicals, has been manufactured. This type is equipped with spraying and dusting equipment. In 1981, prototypes of Kruk with new power plants were tested, they were equipped with the ASz-62IR piston engine and the PT6-A34 turbo-propeller engine. The PZL-106B prototype with new wing of reduced drag was also tested in 1981. The PZL-3SR engine with reduction gear was tested on the Kruk even earlier. All those development works allowed in 1982 to start up production of the PZL-106B aircraft, after having built more than 130 PZL-106A airplanes. The Kruk B is manufactured in the following versions: PZL-106BR with the PZL-3SR engine with a reduction gear, PZL-106BS with the ASz-62IR engine, and it is planned to make the turbo-propeller version PZL-106BT Turbo Kruk with engine PT6 or similar (e.g. M-601). The new wing of the Kruk B and the new power plant improved economy of this aircraft by more than 25%. The version with the ASz-62IR engine is designed for countries in the tropical climate zone. The load capacity of the Kruk BR is 1050 kg of chemicals, that figure for the Kruk BS amounts to 1200 kg and for the Turbo Kruk it reaches 1300 kg. The Kruk A airplanes are used in Poland, Africa and the GDR. Several countries, e.g. Czechoslovakia, are interested in the Kruk B.

The **PZL An-2**, having been built in Poland since 1960 but continuously improved, has load capacity of 1350 kg of chemicals in its agricultural version designed for dusting or spraying works. 5500 An-2 airplanes in this version have been built in Poland and they are still being manufactured.

The **PZL M18 Dromader** is the first aircraft of the Dromader family. 100 Dromaders were built from 1978 till March 1982. The PZL-M18 is driven by the ASz-62IR engine and its load capacity amounts to 1500 kg of chemicals (in the overloaded version — 1830 kg). In 1982, a prototype of the PZL-M21 Mini-Dromader, driven by the PZL-3SR engine, was built. Its load capacity is about 1000 kg of chemicals. The largest airplane of the Dromader family will be the PZL-M24 Dromader Super, the prototype of which is planned to fly in 1983, and the production of which is to be started in 1987. Being driven by the same engine as the PZL M18, it will be larger in size and its hopper will have 2700 l cubic capacity and 1800 kg of chemicals load capacity (in the overloaded version — 2300 kg). The fourth version will be the PZL-M24 Dromader Super Turbo with a turbo-propeller engine of power rating similar to that of the ASz-62 engine — it is planned to be launched in 1985. The smallest aircraft of this family is to be the Dromader Mikro, with the AI-14 or the PZL-Franklin engine, of 300 kg of chemicals load capacity. The airplanes of this family are to have many common components which will lower their production costs, will make their use easier and will reduce costs of their operation.

The PZL-M15 Belphegor has not been manufactured since 1981 because after receiving of 120 airplanes the customer recognized that this type did not achieve the expected economic parameters.

Multipurpose Airplanes

The PZL Works manufacture two multipurpose airplanes: Wilga and An-2.

The **PZL-104 Wilga** was manufactured from 1968 in the Wilga 35 version, and in 1979 a new version, named Wilga 80, meeting requirements of American regulations FAR, was created. The latter version has been manufactured since 1980. More than 660 airplanes of the entire Wilga family have been made up to now. The PZL-104 Wilga is a multipurpose aeroclub airplane, designed for towing gliders, parachute jumps, navigation flights etc. A floatplane version of the Wilga is used in Canada.

In 1982, a prototype of the new version of this aircraft designated PZL-104 Wilga 80/1400, was built. In this version is applied trapezoidal wing tips increasing the wing span and the wing area. The take-off mass of this aircraft is increased to 1400 kg, and it is driven by the PZL AI-14RD engine of power rating increased to 206 kW (280 hp).

The **PZL An-2** is a multipurpose aircraft for local transport services, built since 1960 in versions: cargo, cargo-passenger, passenger, for parachute jumping, for geophysical survey, photogrammetry, ambulance etc. More than 9200 An-2 airplanes in all their versions (including ag-planes) have been built in Poland.

Transport (Passenger) Airplanes

Beside of the production of the An-2 aircraft mentioned above, the PZL-Mielec Factory prepare production of a turbo-propeller airplane for local communication service, the **An-28**. Moreover the Polish aircraft industry participates in production of the **Il-86** airbus, manufacturing tail units, engine outriggers, flaps, screw mechanisms etc. for that aircraft, which makes totally about 12% of the final product. Moreover, the **PZL-M20 Mewa** is used for executive flights, and this type of airplane is also to serve as ambulance.

Training Airplanes

The following training airplanes are manufactured in Poland: PZL-110 Koliber, PZL-M20 Mewa and PZL TS-11 Iskra. The **Koliber** (licence of Rallye) is a 2 to 3 seat training and sport aircraft with a piston engine.

The **Mewa** (licence of the Piper Seneca II) serves for training on twin-engined airplanes. Both these airplanes are driven by engines PZL-Franklin made in Poland. The jet aircraft **Iskra**, having been manufactured for twenty years, is a training airplane for military aviation. All these three airplanes are continuously improved, e.g. the Iskra has been recently furnished with an engine of thrust increased to 1080 daN.

Helicopters

The main product of the PZL-Swidnik manufacturing plant is the **PZL Mi-2**, an 8-seat multipurpose helicopter, made in 25 versions, including training, passenger, transport, agricultural, ambulance, rescue, photogrammetric and many military versions for fighting tanks and ground targets.

More than 3500 Mi-2 helicopters have been built at PZL-Swidnik since 1965. Apart from continuous modification of the Mi-2 helicopter, the factory have developed its version **PZL-Kania** with Allison 250 engines. The most recent design of the factory is a 12-seat multipurpose helicopter **PZL-Sokół**, which is now being tested.

More than 5000 helicopters have been built in Poland since 1965.

Gliders

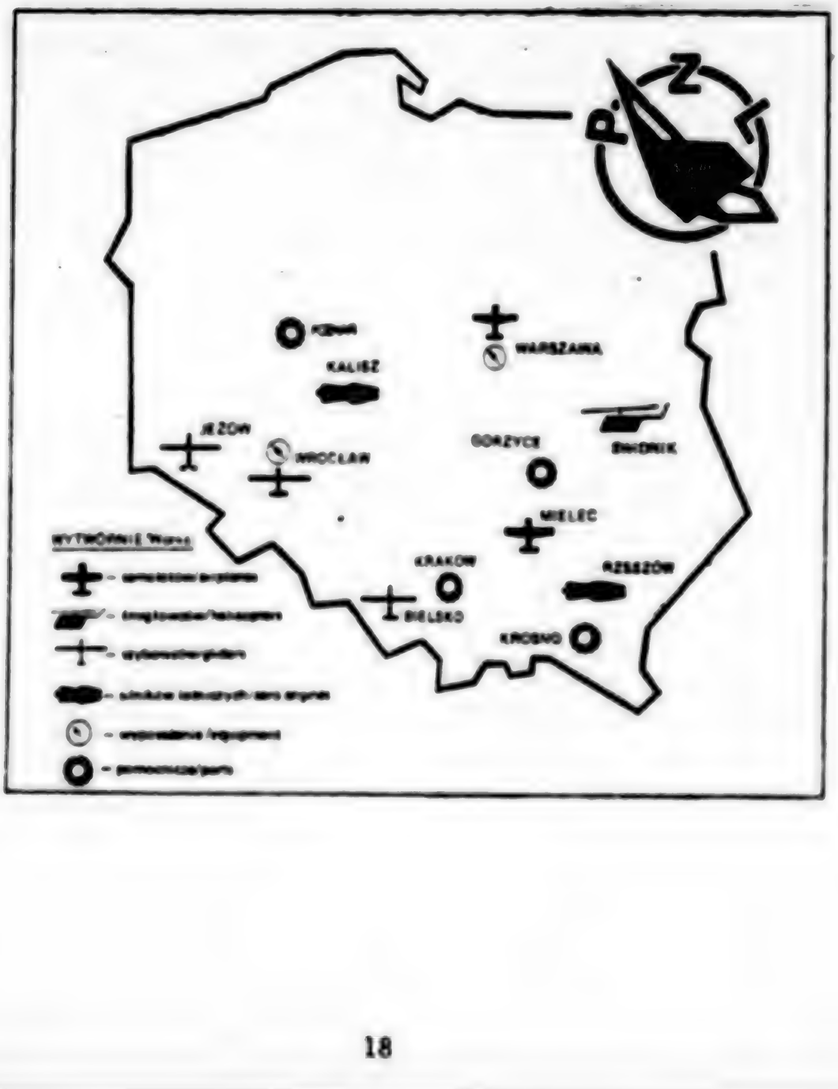
The basic product of the PZL-Bielsko plant is the **SZD-48 Jantar Standard 2** glider. 400 gliders of this type, including its previous version Jantar Std, have been manufactured. In 1980, a new version of this glider with improved performance, the SZD-52 Jantar 15S, was built. A new aerofoil section was applied to this glider. Another version of this glider, the SZD-52 Jantar 15 with wing flaps, counted among the 15 m — FAI class, was also first flown in 1981.

The open-class glider **SZD-42-2 Jantar 2B** is in the world forefront, yielding in performance to the other gliders of 20.5 m wing span. 130 open-class Jantars have been made till now. In 1980, a new version of this glider, with a sigle-piece cockpit canopy, was built. Another version of the Jantar, of 22 m wing span, is being developed at present. The total number of all Jantars manufactured till now exceeds 500.

A laminate glider **SZD-51 Junior**, planned to be a successor of the SZD-30 Pirat glider, is now being tested (776 Pirats have been built up to now).

A double seat training and high performance glider, the **SZD-50-3 Puchacz**, is now being manufactured. It follows the **SZD-9 Bocian**, the production of which has reached 645 gliders.

The SZD gliders are used in 40 countries throughout the world. Since 1946 the Polish aircraft industry has manufactured more than 4300 gliders.



Aircraft Engines

The Polish aircraft industry, represented in this field by the PZL-Rzeszów and the PZL-Kalisz plants, manufactures engines for all airplanes and helicopters in Poland.

The horizontally opposed 4-cylinder piston engines **PZL--Franklin 4A** of 93 kW (125 hp) power rating are used for the PZL-110 Koliber aircraft and the 6-cylinder engines **PZL-Franklin 6A** of 164 kW (220 hp) power rating — for the PZL-M20 Mewa airplane.

Three radial engines of the piston type are being manufactured. The **PZL AI-14RA**, of 194 kW (260 hp) power rating, drives the PZL-104 Wilga airplane. A new version of this engine, the **PZL AI-14RD** with power rating increased to 206 kW (280 hp), which may be equipped with electric or air-operated starter, has been built recently. This engine distinguishes itself with a low noise level. The **PZL-3S** engine of 441 kW (600 hp) power rating, designed for agricultural airplanes, is used for the PZL--106A Kruk and is exported to Romania for the IAR-827A aircraft and to the USA for the Ag-Cat and Thrush airplanes. Its version, with a reduction gear, the **PZL-3SR**, is used to the PZL-106B Kruk aircraft. The **ASz-62IR** engine of 736 kW (1000 hp) power rating is used for the PZL An-2, PZL-M18 Dromader and PZL-106BS Kruk airplanes. More than 14 000 engines of this type have already been made.

The least turbo-prop engine is the **PZL GTD-350** one. It is built in two versions of 295 kW (400 hp) and 330 kW (450 hp) power rating and is used to drive the Mi-2 helicopter. More than 8000 engines of this type have already been manufactured. At present the PZL-10 TWD-10 engine, built in the propeller version **PZL-10S** of 707 kW (960 hp) power rating for the PZL An-28 airplane and in the helicopter version **PZL-10W** of 736 kW (1000 hp) power rating for the PZL-Sokół, is being introduced to lot production.

A turbo-jet engine, the **PZL-SO-1W**, of 1060 daN thrust, is manufactured for the TS-11 Iskra aircraft.

After the World War II the Polish aircraft industry has manufactured about 40 000 aircraft engines.

Agricultural Air Services

The Polish aircraft industry includes two agricultural air service enterprises: an airplane enterprise ZUA in Warsaw and a helicopter enterprise ZEUS in Swidnik. Apart from works carried on in Poland, more than 110 airplanes and helicopters belonging to these enterprises perform agricultural air works in North Africa (in majority in Sudan) and in Middle East countries.

Wytwórnia Sprzętu Komunikacyjnego
Transport Equipment Manufacturing Centre

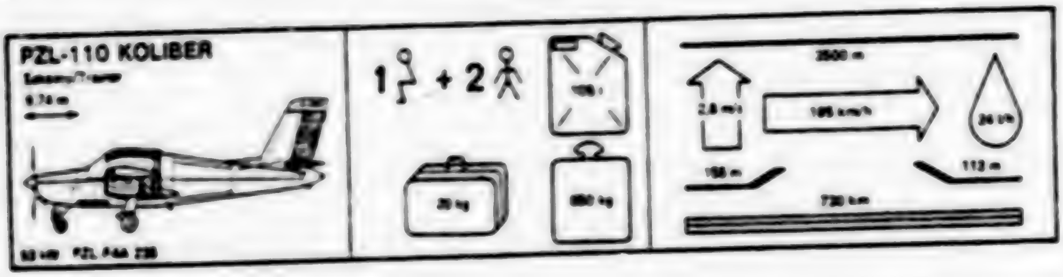
PZL Warszawa – Okęcie

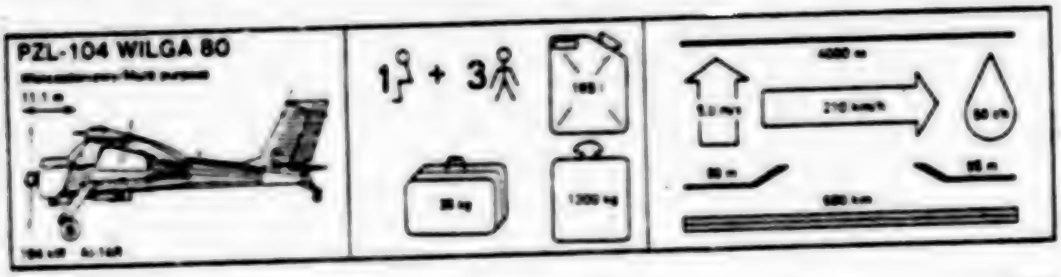
Adres/Address: Al. Krakowska 110/114 02-256 Warszawa-Okęcie, Poland.
tel. 46-00-31, 46-11-73 telex: 814649

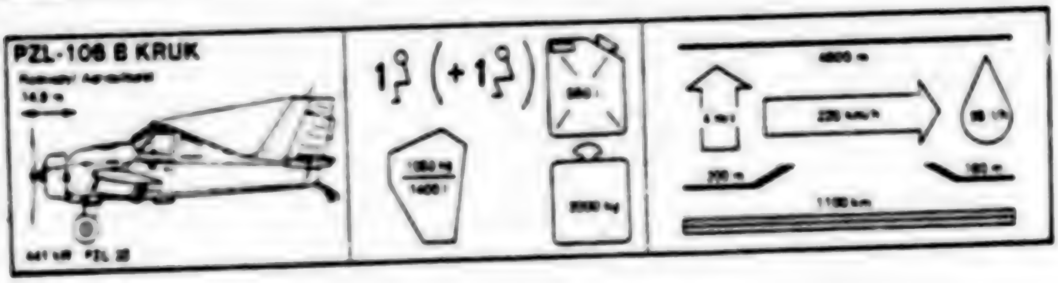
Naczelny Dyrektor/General Manager: inż. Jerzy Milczarek

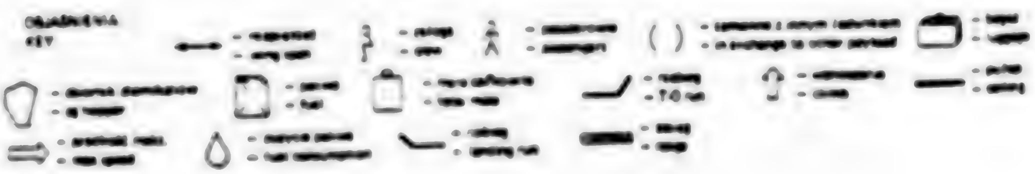
Założone w
Founded in **1928**

Liczba samolotów zbudowanych po 1945 r.
Total of aircraft built since 1945: **2500**









Wytwórnia Sprzętu Komunikacyjnego
Transport Equipment Manufacturing Centre

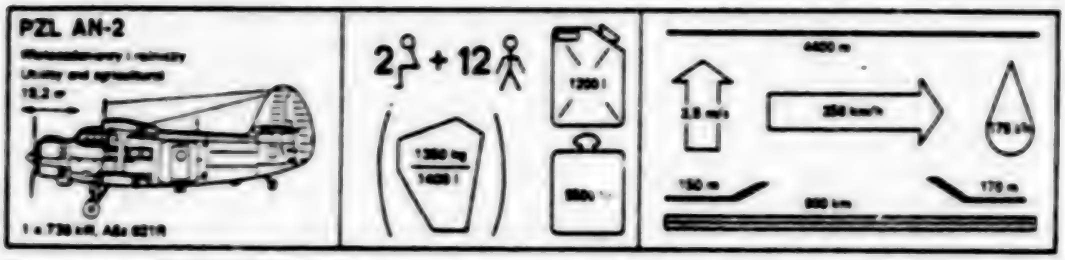
PZL–Mielec

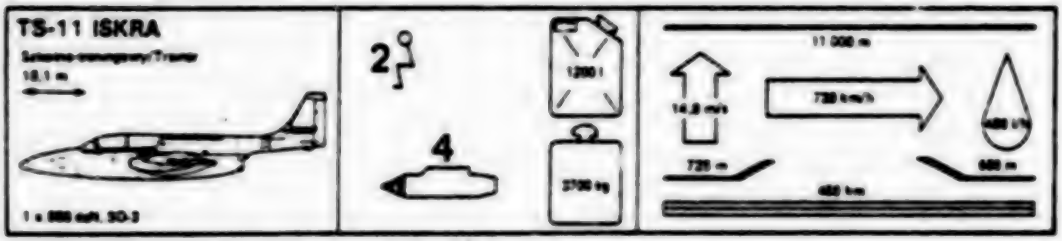
Adres/Address: ul. Ludowego Wojska Polskiego 3,
39-301 Mielec, Poland tel. 70, telex: 83293

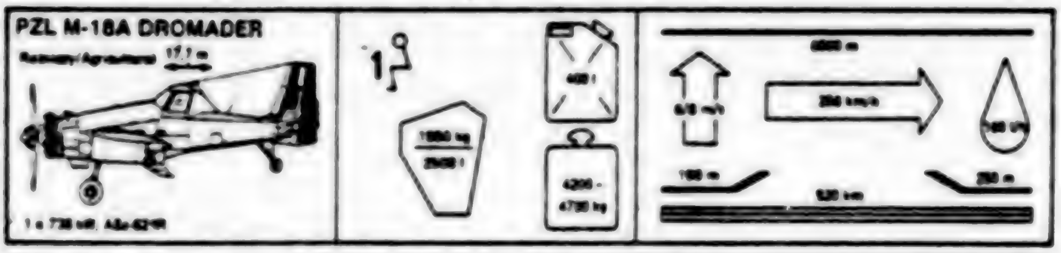
Naczelny Dyrektor/General Manager: mgr inż. Tadeusz Ryczaj

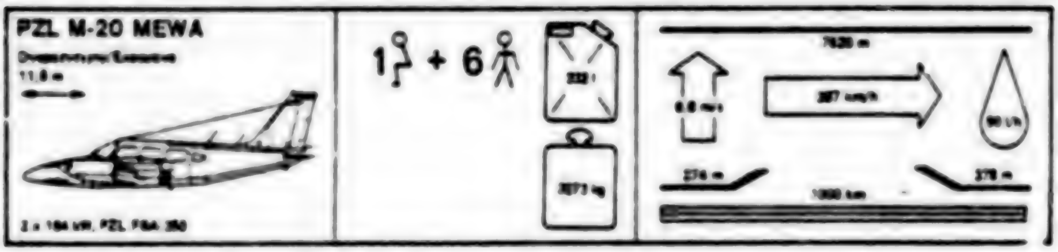
Liczba samolotów zbudowanych po 1945 r.
Total of aircraft built since 1945: **11000**

Założone w
Founded in **1938**









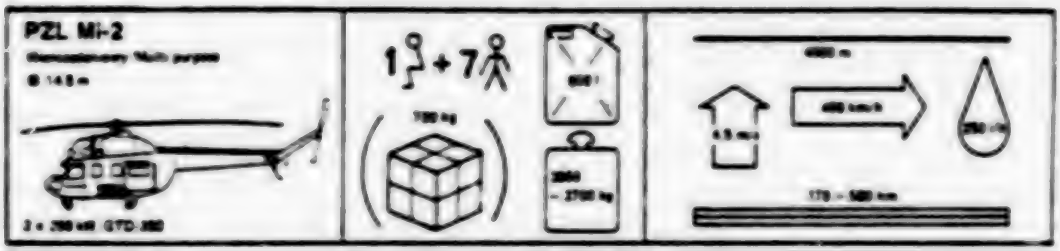
Wytwórnia Sprzętu Komunikacyjnego im. Zygmunta Puławskiego
Transport Equipment Manufacturing Centre

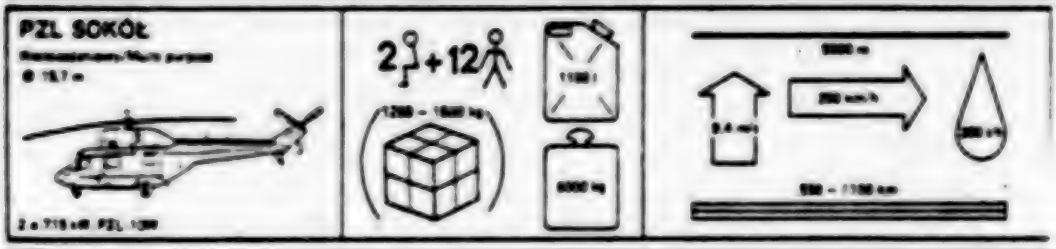
PZL–Świdnik

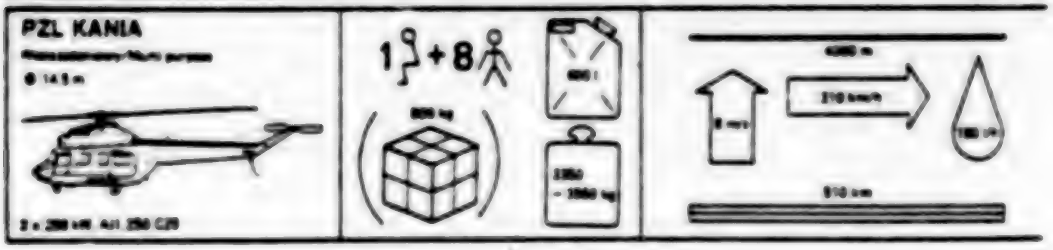
Adres/Address: 21-040 Świdnik, Poland
tel. 120-61, 120-71, telex: 84212, 84302

Założone w
Founded in 1951

Liczba śmigłowców zbudowanych po 1951 r.
Total of helicopters built since 1951: 5000







OBJAŚNIENIA:
KEY

Ø – średnica wirnika – rotor diameter
– załoga – crew
– pasażerowie – passengers
– ładunek – cargo
( ) – zamiennie z innym ładunkiem – in exchange to other payload
– paliwo – fuel
– masa całkowita – total mass
– wznoszenie – climb
– pułap – ceiling
– prędkość maks. – max speed
– zużycie paliwa – fuel consumption
– zasięg – range

Przedsiębiorstwo Doświadczalno-Produkcyjne Szybownictwa
Experimental and Production Concern for Gliders

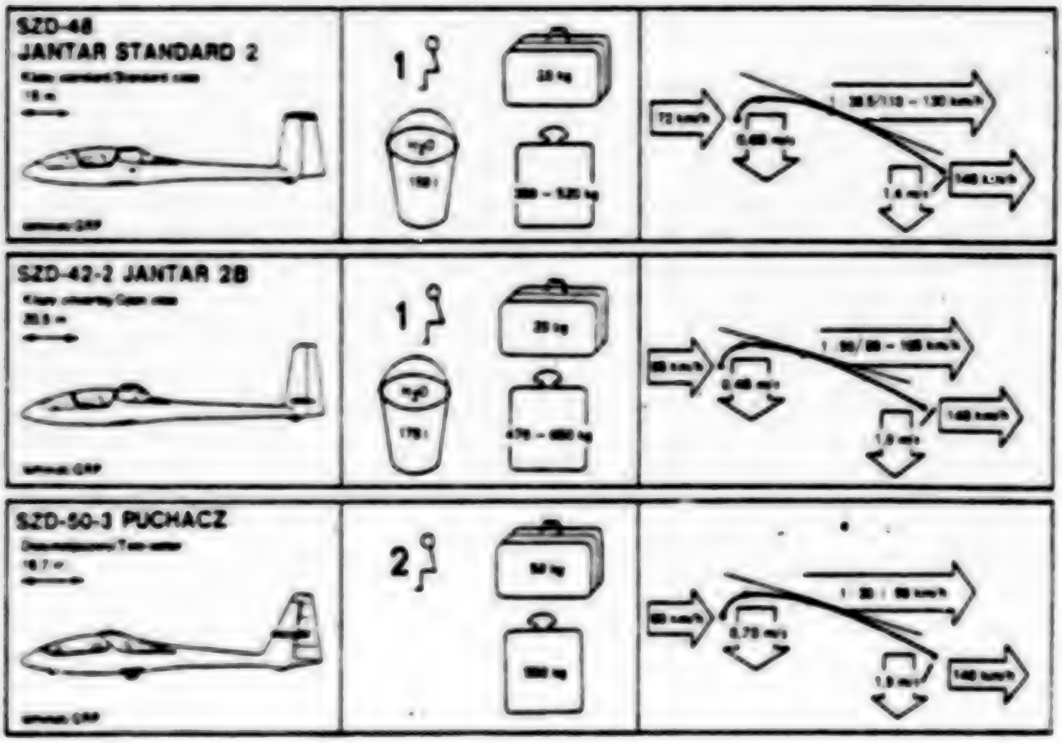
PZL–Bielsko

Adres/Address: ul. Cieszyńska 325, 43-300 Bielsko-Biała, Poland
tel. 250-21, telex: 035259

Naczelny Dyrektor/General Manager: inż. Jerzy Cieśla

Liczba szybowców zbudowanych po 1946 r. **4300**
Total of gliders built since 1946:

Założone w
Founded in **1946**



Agricultural Aircraft

Warsaw TECHNIKA LOTNICZA i AUSTRONAUTYCZNA in English No 3, Jun 82 pp 31-34

[Article by Mgr inz. ANDRZEJ FRYDRYCHEWICZ M. Sc. Eng. and Inz. ZDZISLAW GLAZER B.Sc. Eng.: "Agricultural Aircraft Manufactured at PZL-Okecie in 1982"]

[Text] The Transport Equipment Manufacturing Centre PZL-Warszawa-Okęcie, a Polish aircraft production plant, being solicitous to best satisfy requirements of their customers, are continuously modernizing their products. This activity may be evidenced by starting up, from 1982, lot production of new range of agricultural aircraft PZL-106B, developed from the PZL-106A airplanes, and an agricultural version of the PZL-104 Wilga, the latter being a complementary aircraft for agricultural air enterprises and for private users.

On the ground of experience gathered up to now from the use of the PZL-106A aircraft (more than 140 airplanes) in different climates and by diverse users it has been found that:

— As regards the pilot's safety, both the „active" and the „passive" one, the PZL-106A is on the level of the best world designs, and even is predominant over many of them.

— As regards quality of agricultural operations (width of the swath at required uniformity, penetration of chemicals deep into plants practical efficiency of an operation etc.), this aircraft is predominant over known classic designs.

— As regards productivity, this aircraft is predominant over other designs in the some class of up to 1000 kg of chemicals load capacity.

— As regards operation economy, this aircraft used over small fields and at low discharge rates (plant protection) is on the level of the best airplanes but when operated over large fields and at high discharge rates (fertilization) it is interior to them.

The above considerations have shown that the development should aim at increasing the operation economy through reduction of fuel consumption, namely, first of all, through improvement in the lift/drag ratio and in reduction of the specific fuel consumption of the propulsion systems applied to this aircraft (the use of engines with reduction gears).

The advantages, having already been proved, justified profitability of the undertaking which should make the aircraft competitive in the field of economy as well, regardless the type of agricultural operations and the size of fields.

With this purpose, a new type of aircraft, the PZL-106B, furnished with new wings of higher lift/drag ratio, has been developed. The lift/drag ratio has been increased by better geometry of the slot, better finish of the wing surface and the use of shorter struts supporting the wings on the fuselage. The geometry of the new wing has been chosen from among three investigated models, with utilization of experience gathered from the PZL-104 Wilga aircraft as well.

The new wing has allowed to reduce the fuel consumption by approx. 30% which, combined with more economical versions of the propulsion systems (more efficient propellers and engines with reduction gears), yields a very good result amounting to 95 l/hr during the working flight.

At the same time, it has proved to be possible to maintain unchanged all the other characteristics of the aircraft within the scope of:

— pilot's safety (unchanged aerodynamic idea, structural system and basic airplane assemblies, e.g. very reliable landing gear);

— productivity (short take-off and landing, wide operational swath, short time of working turn and short time of refuelling and chemicals loading);

— other essential operational features (mechanic's seat, a possibility to transport a complete set of agricultural equipment, a possibility to convert each airplane into the double-control training version, quick installation and exchange of agricultural equipment, board scales etc.).

The flight characteristics (stability, manoeuvrability and the properties before, during and after stalling) as well as performance of the aircraft have been improved. The improvement in performance, combined with reinforced structure of the new wing, at slight increase in the specific mass has allowed to increase the mass of chemicals by 1[illegible] kg, i.e. the mass of chemicals amounting to 1000 kg in the non-overloaded version has been exceeded. The reduction in fuel consumption has made it possible to increase the productivity by raising the recommended working speed. All these factors have substantially improved the economy of ag-aviation works.

In order to best satisfy requirements of different users, the PZL-106B aircraft is manufactured in three versions, depending on the propulsion system used.

— The basic version, being the most economical one, is the **PZL-106BR** airplane with the PZL-3SR engine (441 kW, with a reduction gear). It ensures inexpensive and safe performing of all works typical for an agricultural airplane.

— Another version, developed especially as a complementary airplane for users of the An-2 aircraft (unified propulsion system, is the **PZL-106BS** version furnished with the ASz-62IR motor with a reduction gear (721 kW). Owing to high surplus power, this aircraft is particularly suitable for operation in difficult terrain conditions, in mountains and in tropics, ensuring exceptionally high flight safety at high economy of operation.

— The highest hour productivity is achieved by the **PZL-106BT** aircraft equipped with the Pratt-Whitney PT6A-34AG turbine engine (366 kW). This is the version of the highest chemicals load capacity because of low mass of the power plant. The slender shape of its fuselage nose decreases its aerodynamic drag and improves the propeller efficiency. The surplus power and a possibility to brake by the propeller allow to shorten the time of all components of a working flight, i.e. take-off, flight to the operation area, working flight over the field, working turns and landing. The application of a turbo-propeller engine makes it possible to unify the fuel with that used for transport airplanes and to use automobile diesel oil. Low fuel price and very small amount of necessary maintenance works affect low operational costs.

Development in plant protection methods (ULV spraying) has created demand for an aircraft of lower mass and load capacity, with low fuel consumption. Such requirements are perfectly met by the PZL-104 Wilga 35 airplane in its agricultural version, which complements the range of the PZL-106B agricultural airplanes. It has been recognized that the so low load capacity of such an aircraft limits its use to liquid chemicals and low discharge rates. This aircraft is designed mainly for ULV spraying with

	PZL-106BR	PZL-106BS	PZL-106BT	PZL-104 Wilga 35R
Take-off mass	3000	3600	3000	1300 kg
Mass of chemicals	1050	1200	1300	230 kg*)
Maximum speed	229	260	267	195 km/h
Maximum speed with agricultural equipment	203	230	219	170 km/h
Minimum speed	90	99	90	95 km/h
Working speed	150÷160	160	150÷160	140 km/h
Rate of climb with agricultural equipment	3,8	6,2	6,0	3,5 m/s
Take-off run	200	130	160	127 m
Landing run	160	160	120	100 m
Range (without additional fuel tank)	1100	1000	750	740 km
Time of working turn	30	30	28	30 s
Fuel consumption during working flight	95	105	160	43 l/h
Range of discharge rates of liquid chemicals	0,1÷150	0,1÷150	0,1÷150	0,1÷100 l/ha
Range of discharge rates of solid chemicals	15÷350	15÷350	15÷350 kg/ha	—
Width of working swath:				
— for atomizers*)	45	45	45	30 m
— for spraying nozzles**)	35	35	35	20 m
— for tunnel dispersal unit***)	25	25	25 m	—

*) — with fuel for 1 hr 15 min flight; **) — for lateral non-uniformity $S \leq 25\%$; ***) — for lateral non-uniformity $S \leq 20\%$

discharge rates from 0.1 to 12 l/ha and, additionally, for conventional spraying with discharge rates from 5 to 100 l/ha. This, in turn, reduces the aircraft working time per year. For this reason, it has been recognized to be a better solution to utilize for this application a multipurpose aircraft, tested as regards its pilotage and economy, instead of construction of a new small specialistic agricultural airplane. The PZL-104 Wilga 35 aircraft in its agricultural version is equipped with a laminate hopper of 300 l capacity, with an emergency dump system, suspended under the fuselage. Such a location of the hopper, in the wake of the lower engine part, does not cause increase in the aerodynamic drag and, therefore, allows to use the airplane for transport of passengers and small cargo and for inspection of fields and forests without the need to remove the hoppers.

A fan-driven pumping unit (identical as in the PZL-106 airplane) is situated on the landing gear. Pipes with atomizers or spraying nozzles are suspended under the wings. Low mass of the aircraft and, connected to this, low engine power rating necessary to working flights, which result in low fuel consumption, ensure very good operationel economy.

The agricultural equipment may be installed on each PZL-104 airplane manufactured since 1975. The possibility to install the agricultural equipment on airplanes belonging to aeroclubs expands the potential fleet of agricultural airplanes in cases of especially high demand for ULV spraying.

In order to increase productivity and economy of agricultural operations with high chemicals discharge rates, it is necessary to build an aircraft of as high chemicals load capacity as possible. A new, enlarged version of the Kruk, unified to significant extent with the PZL-106BS airplane, is now being designed. This will be an aircraft belonging to the class of 2000 kg of chemicals load capacity and its second basic application will be fire fighting.

Apart from manufacturing of agricultural airplanes and desing works at their new versions, the WSK-Okęcie factory carry on as well studies on a specialistic agricultural aircraft of 1990's.

CSO: 2020/51

SPECIAL CURRENCY EXCHANGE RATES PUBLISHED

Warsaw TRYBUNA LUDU in Polish 2 Aug 82 p 7

[Text] Announcement of Exchange Rates Table No 31/82, effective 2 August 1982, by Stanislaw Majewski, president, Polish National Bank, on 2 August 1982.

I. Foreign-currency exchange rates in zlotys for countries of the second [as published] [should be first, as published in RZECZYWISTOSC 2 Aug 82 p 4] payments area [socialist countries] for commercial and noncommercial payments remain unchanged.

In purchases of travelers' checks for rubles, issued by the USSR Foreign Trade Bank and payable outside the USSR in the currency of the country where cashed, an exchange rate of 11,731.90 zlotys per 100 rubles is applied.

II. Foreign-Currency Exchange Rates in Zlotys for Countries of the Second Payments Area [Capitalist Countries]

[Table on following page]

Exchange Rates Table No 31/82

Country	Curr Symb	Currency	Foreign Exchange		Money		
			Purchase	Sales	Purchase	Sales	Average
			4	5	1	2	6
Saudi Arabia	771	1 rial***	24.71	24.95	--	--	24.83
Australia	781	1 Aust.dollar	85.53	86.39	84.24	87.68	85.96
Austria	786	100 schillings	498.99	504.01	491.47	511.53	501.50
Belgium	791	100 francs	183.88	185.72	181.10	188.50	184.80
Denmark	792	1 kroner	10.11	10.21	9.96	10.36	10.16
Finland	780	1 markka	18.18	18.36	17.90	18.64	18.27
France	793	1 franc	12.61	12.73	12.42	12.92	12.67
Greece	724	100 drachmas	124.24	125.48	107.68	127.36	124.86
Spain	785	100 pesetas	77.08	77.86	75.92	79.02	77.47
Holland	794	1 florin	31.72	32.04	31.24	32.52	31.88
India	543	100 rupees***	893.57	902.55	--	--	898.06
Ireland	782	1 pound***	120.53	121.75	--	--	121.14
Japan	784	100 yen	33.79	34.13	33.28	34.64	33.96
Yugoslavia	718	100 dinars	175.21	176.97	151.86	179.61	176.09
Canada	788	1 Canad.dollar	67.22	67.90	66.21	68.91	67.56
Kuwait	770	1 dinar***	297.03	300.01	--	--	298.52
Lebanon	752	1 pound	16.70	16.86	16.44	17.12	16.78
Libya	651	1 dinar***	287.00	289.88	--	--	288.44
Luxembourg	790	100 francs	183.88	185.72	181.10	188.50	184.80
Norway	796	1 kroner	13.48	13.62	13.28	13.82	13.55
Portugal	779	100 escudos	102.02	103.04	88.42	104.58	102.53
FRG	795	1 mark	35.08	35.44	34.55	35.97	35.26
United States	787	1 dollar*	84.98	85.84	83.70	87.12	85.41
Switzerland	797	1 franc	41.63	42.05	41.00	42.68	41.84
Sweden	798	1 kroner	14.08	14.22	13.87	14.43	14.15
Turkey	627	100 pounds	52.14	52.66	45.19	53.45	52.40
Great Britain	789	1 pound**	149.27	150.77	147.02	153.02	150.02
Italy	799	100 lira	6.26	6.32	5.42	6.42	6.29

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* Valid also in clearing accounts with the following countries: Bangladesh, Brazil, Ecuador, Greece, Iceland, Kampuchea, Colombia, Lebanon, Pakistan, Peru and Turkey.

** Valid also in clearing accounts with the following countries: Nepal and Pakistan.

*** The Polish National Bank does not purchase money in these currencies.

CSO: 2600/826

OFFICIALS INTERVIEWED ON FOREIGN DEBT SITUATION

Finance Adviser Interviewed

Warsaw POLITYKA in Polish No 18, 19 Jun 82 p 19

[Interview with Jan Boniuk, adviser to the minister of finance by Mieczyslaw Komuda; date and place not given]

[Text] [Question] In the West they are saying with contempt that it was harder for them to borrow $100 from their own banks than to lend us half a million dollars.

[Answer] That is an anecdote.

After the war, for many years, it was believed that Poland was sincere about paying its debts. Despite social reforms and the nationalization of foreign property, we were one of the first socialist countries to conclude indemnification agreements with all Western partners. According to these agreements, we would repay approximately 40 percent of the value of property seized from foreigners, including war damages.

We fulfilled our obligations. We paid and are still paying for debts incurred or guaranteed by the prewar government. Moreover, we paid all our credits and obligations contracted abroad. Everyone knew that lending us money was a sound investment. What's more, our policy restricting industrial investments in the 1960's and our restraint in asking for credit meant that many associations and banks viewed Poland as an interesting future market for investing their capital.

[Question] Did we make any political concessions when we acquired credit?

[Answer] As an observer in these matters, I did not note any such concessions. Our experiences have shown that as debtors we always paid our debts, thus there was not reason to force us to make added guarantees. Of course, both the political atmosphere--the beginning of the 1970's was a period of the growth of detente--and the fact that Poland had good relations with many countries had an impact on the degree to which we could use credit and the extent of the development of our economic ties with the West and with the whole world. Maintaining good relations meant that we had to take certain steps, but these were in no way political concessions.

To be precise we should add that our domestic policy in the 1970's helped us to enter into contacts on the economic plane. However, in speaking of the policy of the first half of the 1970's, if someone were to perceive a clear connection between political concessions and the possibilities of making use of Western credits, it would be a tremendous oversimplification. The use of credit and the nature of import implemented during the previous period are another matter.

[Question] When did the West really begin worrying about its money?

[Answer] The date that is given is 26 March 1981. However, it was really earlier than this, since our systematic utilization of credit on the Eurodollar market has had an impact on the attitude toward Poland since 1976. This was also the year that the level of debt really began to reach critical proportions and we began to fall into the so-called indebtedness trap. We also had trouble amassing the sums that we intended to borrow from American banks, for example. The Japanese were also very restrained in extending credit to us. In Western financial spheres, since 1979 there has been the attitude (and not without reason) that the level of Poland's indebtedness definitely exceeds the country's payment possibilities. This is how it was in reality and in 1979 we began the process of refinancing our debts, first in the form of separate agreements on financial credits.

[Question] Why the 26 March 1981 date?

[Answer] Payments made after this date were discussed for many years regarding the comprehensive refinancing and restructuring of our indebtedness.

[Question] Did we break our former agreements?

[Answer] We stopped repaying credit according to the previously established schedule, but this was done with the tacit agreement of the other party, with whom we had been conducting multilateral discussions on refinancing since August 1980. In the spring of 1980, refinancing assumptions were concluded with the other governments, and at the end of 1980/beginning of 1981 discussions with banks were initiated.

We conducted talks with all of our creditors. Some say that these discussions did not begin soon enough. However, it must be noted that the first refinancing discussions with France began in 1979, and that our economy broke down under conditions of our import markedly exceeding our export. It is also important that opening more extensive discussions in a situation where it was still possible for us to acquire new credit to finance our payment needs basically signified the ruling out of these opportunities as well. One does not grant credit to someone who admits that he is insolvent.

[Question] In spite of this, 1981 was a good year, at least compared with what we have now.

[Answer] It was a year of difficult discussions, which were nonetheless concluded rapidly and positively. A refinancing schedule was adopted and coordinated with the governments of the most interested States. Ninety percent of the credits and interest owed to banks that governments had given guarantees was deferred. However, the fact that we entered into discussions with governments and banks, telling them honestly that we had nothing with which to pay--and to be honest, we did not--caused creditors to be favorably inclined toward us. It was of key significance that we were ready to present a specific program and method making it possible for both sides to resolve the matter.

[Question] What was the role of political arguments?

[Answer] Governments and banks are partners in discussions. While governments are guided by political considerations, they must also take into account economic interest. Regarding banks, I would not overestimate the role of political arguments. The direct link between external political even events and financial demands is rather difficult to define under normal conditions. Without a doubt, the political situation and political ties are a vital factor of credibility. On the other hand, when one uses direct political arguments in discussing finances, the results are limited. In discussion with banks, the issue of our political situation was mentioned only where it directly affected our payment situation. On the other hand, banks did not and could not create conditions equating the fulfillment of specific political demands with the resolution of our payment difficulties. This was clear in our conversations with banks. But let us not forget that a primary goal of banks is to make money. Calm in the debtor State serves this goal better than confusion. Even if political sympathies sometimes lie with those who are fostering the confusion, money is the most important thing, and it is easier to get money from someone who is able to control the situation.

[Question] Does this mean that 13 December [1981] helped us?

[Answer] Although it has not been recognized officially, in earlier talks it was clearly indicated that we must take decisive action not only in the economic sphere. Creditors have noted a marked improvement in raw materials industries this year (in 1981 they attached much importance to this), but an increase in all of industrial production, especially export, is of crucial importance.

[Question] Let us return to the facts. We were still able to save ourselves in 1981.

[Answer] Yes. With the approval of our bank creditors, beginning 26 March 1981, we deferred the capital payments that fell due that year.

[Question] How much money was this?

[Answer] It was $2.2 billion of capital payments alone that was due to banks. Together with the credits guaranteed by governments, we deferred repayment of more than $5 billion in 1981. However, we were obliged to pay the banks interest. Thus, 100 percent of our capital debts was deferred, but 5 percent of these debts was to be paid in 1982. We had terrible difficulties paying the banks the interest, and did not pay it until the end of March 1982.

[Question] This was the condition...

[Answer] It was the condition of the refinancing agreements we signed in 1981.

[Question] Did you participate in these talks?

[Answer] Yes. The agreement was constructive in that after it was signed, two main debtors arose, the Polish People's Republic [PRL] and the Trade Bank S. A. [Company Ltd.] in Warsaw. The banks claimed that the Polish National Bank [NBP] was also a debtor, but ultimately it was a guarantor. According to the agreement, all foreign trade central offices and other Polish organizational units that had concrete debts were debtors. The responsibility of the latter is limited to their own debts. Practically speaking, they did not assume any new obligations, and their old obligations were reduced, since after the day of restructurization, i.e., the day on which the original obligations falling due in 1981 become frozen and the new obligations under refinancing replace them, the Trade Bank S. A. in Warsaw and the PRL become the debtors. In effect, the state has assumed a series of obligations.

[Question] Was this the only change? Was the Trade Bank formerly the major debtor or guarantor?

[Answer] Many agreements had a Polish guarantee, especially the largest agreements, i.e. those agreements in which we had many partners and that involved more significant amounts of money; the PRL, not the Polish government was the guarantor. This is a common practice in international relations, although I know that people find if incomprehensible.

Thus, had we not resolved our 1981 indebtedness and officially declared our insolvency, Poland as a state would have been responsible for these debts and a series of undesirable actions could have been initiated against us.

[Question] We signed an agreement with 505 banks. Are all of these our creditors?

[Answer] Yes. They are all our 1981 creditors. We would not have been able to sign such an agreement, had we not assured all of our creditors that they would be treated equally. This means that we may not repay our debts to someone else on better terms than those in effect with regard to these banks.

[Question] Is there the danger that one of our creditors will declare Poland's insolvency?

[Answer] Since March 1981, such a danger does exist. No bank who signed the recent agreement is permitted to declare the insolvency of the PRL by virtue of our 1981 obligations, however, they may declare our insolvency regarding 1982 obligations, a situation that has not yet been resolved. We are convinced that they will recognize this year as well that it is much more beneficial for them to resolve these problems in understandings made with Poland than by initiating an all-out campaign against Poland.

Nonetheless, such a campaign is always possible. Of course, if the majority of our creditors realizes that it is senseless to undertake such a campaign, and one or several banks decide to start it, the banking company itself will find it advantageous to dissuade the bank(s) from this idea. By pushing its claims, the bank company would restrict our payment possibilities, and thus would threaten the interests of the other banks to some degree.

[Question] We may have different creditors in 1982 than those from the group of 505 banks.

[Answer] There will certainly be some changes, but they will mainly involve secondary banks.

[Question] Then is the agreement on debt refinancing a battle won?

[Answer] We have taken a very important first step, but we have not resolved anything finally. If we do not manage to resolve our problems regarding our 1982, 1983 and post-1983 obligations and above all, if we do not solve our domestic economic problems and increase our export capabilities, the agreement will have been fruitless.

[Question] How will we be treated then?

[Answer] First, Poland's insolvency may be declared. Such an announcement would be effective if it were universal, that is, if it were done not by one country or bank, but by the majority of the international financial community. In practice, this would mean a sudden decline in export income. Payment of all sums due our account would be stopped. We would have to suspend our foreign trade and export to the West or restrict it drastically, at least for a time. Under no circumstances could we implement import, even at current levels. We could not ask for credit. Of course, there would be attempts to secure claims on Polish property located abroad--and on ships and planes as well. There is a precedent for this in international relations.

[Question] What will happen in your opinion?

[Answer] The discussions will continue. Any other solutions affords us nothing. For example, if we ourselves suspended payments explaining that Poland of the 1980's is not Poland of the 1970's, and that we do not intend to pay our obligations incurred during those years (for a lot of money has been made on us at that), we would force our creditors to take action to protect the international financial market. This market cannot function when debtors can decide that they do not have to return the money they have borrowed because, for example, they have been tricked.

The political repercussions of a possible declaration of Poland's insolvency would also be very important. It would have the effect of thoroughly freezing East-West relations. This is a convenient fact for all who are interested in increasing international tension.

[Question] Can we still pursue a policy in this field?

[Answer] One can pursue a policy as long as he is still a partner in international relations. We have a narrow, but yet existent field of strategy.

[Interviewer] Thank you for the interview.

International Department Head Interviewed

Warsaw POLITYKA in Polish No 18, 19 Jun 82 p 19

[Interview with Zoigniew Karcz, head of the foreign department, Ministry of Finance, by Zygmunt Szeliga; date and place not specified]

[Question] Director, we are to discuss the opportunities, prospects and conditions for extricating ourselves from the "noose of indebtedness," and especially our survival this year, which looks especially gloomy in this regard. Perhaps you will tell me authoritatively how much we are supposed to pay this year, since I am aware of 10 different figures. While they are all in the range of $10 billion, the difference between the lowest figure and the highest figure is $1 billion, or considerably more than we are bringing in this year for exporting coal.

[Answer] Unfortunately, I cannot clarify this for you.

[Question] Do you not know either? Who does know?

[Answer] It is not a question of knowledge, but of the mechanism of the world capital market. If you were to insist, we could calculate the state of this year's obligations for this date, 10 June 1982, down to the last dollar. But the day after tomorrow, this figure would be different, even if the dollar had not dropped or increased in value.

[Question] By what magic?

[Answer] No magic. Two objective factors determine this variability. The first is the changeability of Western currency-exchange rates. We hold obligations in practically all of the major Western currencies. But today, for example, a billion FRG marks is equivalent to $435 billion. If in a week the dollar increases in value to 2.20 marks, this same 1 billion marks will cost us $455 billion. The same is the case with other currencies. The second factor concerns only interest, which is usually calculated according to the so-called floating rate. This means that we pay interest at the rate that is in effect on the day of repayment. A few months ago, we estimated that our annual interest would average 13.5 percent. This 0.5 percent difference in the interest rate, applied to our total indebtedness, amounts to $130 million. In reality however, the differences in the interest rate may be considerably greater--to our advantage or our disadvantage. Theoretically, then, we are supposed to repay $10.5 billion this year. Of this, approximately 30 percent is interest, and 70 percent, the repayment of capital.

[Question] At any rate, it is over $10 billion. It seems to me that this must be reduced in some way, since it is unrealistic for us to pay it all. What is the current state of negotiations?

[Answer] Your question covers two matters. Let us begin with the unfortunate $10 billion. I used the word theoretically advisedly. Both we and our creditors know that we cannot repay everything according to the previously established deadlines. Hence our actions taken to restructure our debt, which have generally met the approval of our creditors. However, we are a nation that loves extremes. Several years ago we said that debt is a threat to no one. Now we try to scare ourselves, saying that we owe $27 billion, instead of less than $25 billion, the actual figure. It is the same with repayment. If we can repay about 40 percent of the amount due, there is the real possibility that we will be able to defer paying the remainder if we work it out with our creditors. Even so, it is a huge sum. It causes us big problems, but let us not scare ourselves with amounts that are gross exaggerations of the real situation.

Let us make note of two points. First: we initiated the refinancing procedure some time ago, in 1978, when it first became impossible for us to discharge our annual obligations in full. At that time we were still considered to be reliable in repaying our debts. Initially this involved relatively small sums; last year it reached major proportions. Second: we have obligations to several hundred banks, but generally they are divided into two parts. The first group includes our debts that are guaranteed by the governments of 15 Western States, which we must discuss primarily with governments. The second group includes our unguaranteed debts, let us call them our private debts, which we are discussing with banks directly.

We initiated talks with government representatives on the topic of a payment agreement for 1982 in September 1981. They were suspended in January 1982. After setting in order the matter of the rest of our 1981 interest, we signed an agreement with the banks for 1981. We paid the interest at the end of March and 6 April 1982 we concluded an agreement with a group representing these banks. Our first meetings with them about an agreement for 1982 were held 28 and 29 April 1982. Currently the situation of private banks is more flexible, but an effective solution to the problems of refinancing must include both kinds of obligations. The governments have halted all refinancing negotiations for extraeconomic reasons. The Reagan administrative policy plays a major role here.

[Question] Hence the impasse on guaranteed credits, which also affects negotiations on unguaranteed credits.

[Answer] Yes, it is an impasse, but no door has been slammed shut. We have made numerous announcements of our readiness to talk, our credit needs, possibilities for cooperation and export and the like. There is still only silence from the other side, the governments of the NATO States.

[Question] Perhaps we should forget the governments for the time being and conduct negotiations with the private banks. Last year we reached agreements with the governments first, and this opened the way to finalizing the matter of unguaranteed debts. Should we reverse the order this year?

[Answer] In principle this is possible, but there is a problem in that we have one treasury for everything: export, import, repayment and the need for new credit. Without a preliminary understanding with the governments, particularly regarding import, export and indispensable new credits, we will not really be able to tell private banks what we expect and what possibilities we have. These discussions must be very concrete; there is no room here for promises and circular language. Precise figures and facts are important. We must also deal with the overly sensitive attitude of banks in their distrust of Poland.

[Question] If you were a Western banker with $500 million in Poland, how would you act?

[Answer] You are trying to rattle me, but I will not fall for it. We are attempting to empathize with their situation and way of thinking and we suggest that they do the same. The fact is that the two sides have conflicting interests. Common ground must be found.

[Question] In my opinion, this common ground is clearly Poland in the phase of development with its growing export and payment potential.

[Answer] We believe that this is also the viewpoint of our financial and economic partners. But there are two or three basic problems. The first is economic: the severe recession in the Western economy. This engenders skepticism concerning our potential to expand export on these markets. The second problem is political: the sanctions and restrictions imposed by the governments of the NATO States. The third is once again economic and pragmatic: bankers often say to us: you have received extensive credit and you have promised to use it to modernize the economy and to ensure its growth and export. Instead you have a crisis of catastrophic proportions. What is the guarantee that further doses of credit will allow you to stand on you feet? Perhaps the same thing will be repeated.

[Question] Let us now drop the subject of debts and credit and move on to purely domestic matters--the mechanism of the functioning of the economy, guaranteeing its effectiveness and rate of growth.

[Answer] Exactly. Last year, the factor outweighing all others in refinancing talks was programs of reform and economic recovery. Now the consistent execution of these programs and gradual, visible improvement are of key significance.

[Question] Meanwhile, one sees no improvement, mainly due to a shortage of funds for import. Does it not seem that we are moving in a vicious circle?

[Answer] There is improvement in several important areas (coal export, reduced farm imports), but it is a spiral of sorts. However, this spiral movement is disadvantageous both to us and to our creditors. It is a simple deduction: a lack of imports means decreased production, which means less export, reduced payment potential and the like.

[Question] What can help us?

[Answer] First, we should eliminate unnecessary imports, and there are many of these. Second, we must export on a large scale. This is unrealistic given our current domestic needs and the general disinclination of society to export. Third, we must reorient, i.e., step up our economic relations with socialist countries significantly and increase our economic supply from this source. However, the possibilities here, especially the short-term possibilities, are also limited for objective reasons. Fourth, further commodities credits from the West. We must make use of all these four sources together to resolve our problems. Of course, we must also improve management and efficiency at home as well.

[Question] Let us presume that the three first conditions are fulfilled, on such a scale as is possible, and that efficiency increases. What then may be expected from our creditors?

[Answer] Unfortunately, what we may expect is rather pessimistic. First, let me note last year's refinancing conditions. Regarding guaranteed credits, we had repayment of 90 percent of last year's obligations deferred. This includes capital and interest. Regarding our unguaranteed credits, 95 percent of our debt was deferred. This includes only capital, and we had to pay the interest. Let us assume that we will have the same or similar refinancing conditions this year. Under such conditions, and realistically evaluating our export potential and the effects of reorientation, we will be short approximately $3.5 billion in our balance of payments for 1982. Of this we should obtain $2 billion to $2.5 billion in new credit to enable the economy to bounce back and begin to increase our export capabilities.

[Question] How much credit do we have?

[Answer] About $1 billion. These are not new credits; they are holdovers from former agreements. While in principle these agreements are continuing some countries have reevaluated our program under the impact of U.S. sanctions and have refused us certain credit deliveries. However, the biggest problem is the failure to renew credit agreements. Formerly we had a number of such agreements, that were more or less automatically renewed from year to year.

[Question] Where refinancing is concerned, is our situation a singular phenomenon worldwide?

[Answer] Only in that we are not a member of the International Currency Fund [MFW]. I believe that this is the first time that a country that does not belong to the MFW has obtained refinancing on a large scale. Refinancing itself is not unusual; on the contrary, it is the bread and butter of the world financial system. Last year alone, there were at least 20 different refinancing operations in the world economy. A number of countries must resort to this measure. Of course, our refinancing program last year was the largest.

[Question] My final question concerns your feeling after reading the "table of confidence" of Western banks, in which Poland place 95th worldwide.

[Answer] What bothers me is not the table itself, but the reality it represents. Various added circumstances have had an impact on our drastic decline: the general political atmosphere in the world, sanctions and restrictions that can affect our payment potential and the like. But the determining factor is the reality that is readily measurable in terms of indexes of production decline, the decline in national income and a reduction in export. On the other hand I know that it is always possible to regain one's place on such tables. I believe that we can get the economy moving again. We will then be able to recover our payment potential fairly quickly, as well as the credibility and confidence of creditors. We need understanding from our creditors and, above all, consistency in our own actions.

[Interviewer] Thank you for the interview.

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August 23, 1982